

# HYMENOMYCETOUS FUNGI OF SIBERIA AND EASTERN ASIA—MOSTLY OF WOOD- DESTROYING SPECIES

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The fungi enumerated in the following list were received from Professor K. E. Murashkin of the Siberian Agricultural Academy, Omsk, Siberia, in two lots. The first, consisting of 113 specimens, was received in February, 1928. Some of the specimens were already named, whereas others were for me to study and report results. After a report concerning this sending had been made the second and larger consignment of specimens arrived, study of which was completed recently.

The complete series of some 250 carefully selected specimens, with record for each of the botanical names of the substratum upon which growing and the widely separated localities across Siberia proper and Eastern Asia to Vladivostok, has been of great interest in extending westward the range of some species heretofore known only in the United States and in extending the eastern range of many European species. Descriptions of some of the rare and more or less imperfectly known species of Fries and of Karsten would seem in the light of these specimens to have been based on isolated gatherings from the extreme western limits of the range of each. An example of the latter is *Stereum ochroleucum* Fr., concerning which the mycologists of central and southern Europe are in error.

An early study comprising all groups of the fungi of Siberia collected by Martinoff, chiefly from the region of Minussinsk, was made by Baron de Thümen, assisted by specialists. The results were published in five parts as Thümen, 'Beiträge zur Pilz-flora Sibériens,' in Soc. Imp. Moscou Bul. Vols. 52, 53, 55 and 56, of the years 1877-1881. Saccardo published an additional list of Siberian fungi in Soc. Roy. Bot. Belg. Bul. Vol. 28, pp. 77-117. *pl.* 4-6. 1889, and included in his work a list of all the species given in the five papers by de Thümen. In the following



list, confined to Hymenomycetes and covering more equally all northern Asia rather than Minussinsk, I have checked with an asterisk \* each species given before in the lists of de Thümen and Saccardo.

The collections in the Districts of Omsk, Tara, and Sajany, Siberia, were usually made by Professor Murashkin, those in the District Barnaoul, Siberia, by Konjev, those in District Amur, Eastern Asia, by Krawtzev, and those in District Vladivostok, Eastern Asia, by Ziling. All received are preserved in my herbarium.

#### AGARICACEAE

\**Pleurotus applicatus* (Batsch) Berk.

On *Sorbus Aucuparia*, Altai, Asia, July 12, coll. *Murashkin*.

\**Schizophyllum commune* Fr.

On *Picea excelsa*, District Tara, Siberia, August, coll. *Murashkin*, B 4.

*Lenzites heteromorpha* Fr.

On *Abies sibirica*, District Sajany, Siberia, August, coll. *Murashkin*.

*Lenzites laricina* Karst. Soc. pro Fauna et Fl. Fennica Acta 27<sup>4</sup>: 4. 1905.

On *Larix sibirica*, District Sajany, Siberia, July 10, coll. *Murashkin*, B 9; on *Larix sibirica*, Altai, Asia, August, comm. by K. E. *Murashkin*, B 41; on *Larix dahurica*, District Amur, Eastern Asia, October, coll. *Krawtzev*, comm. by K. E. *Murashkin*, B 093.

*Lenzites septentrionalis* Karst.

On *Betula verrucosa*, District Tara, Siberia, June, coll. *Murashkin*, B 13.

*Lenzites tenuis* Lév.

On rotting trunks, District Vladivostok, Eastern Asia, June, coll. *Ziling*, comm. by K. E. *Murashkin*, B 0150. The specimen bearing this name was too badly eaten by insects for study.

#### POLYPORACEAE

*Polystictus abietinus* (Dicks.) Fr.



On *Abies sibirica*, District Sajany, Siberia, July, coll. *Murashkinsky*.

\**Polystictus biformis* Klotzsch

On rotting wood of *Betula dahurica*, District Amur, Eastern Asia, August, coll. *Krawtzew*, comm. by K. E. Murashkinsky, B 089.

\**Polystictus hirsutus* (Wulf.) Fr.

On *Prunus Padus*, District Tomsk, Siberia, August, coll. *Ziling*, comm. by K. E. Murashkinsky.

*Polystictus pergamenus* Fr.

On *Abies sibirica*, District Sajany, Siberia, August, coll. *Ziling*, comm. by K. E. Murashkinsky; on *Carpinus betulus*, Dagestan, Russia, May, coll. *Sheludjanova*, comm. by K. E. Murashkinsky.

*Polystictus radiatus* (Sow.) Fr.

On *Betula japonica*, District Amur, Eastern Asia, August, coll. *Krawtzew*, comm. by K. E. Murashkinsky, B 099.

\**Polystictus vulpinus* Fr.

On *Populus tremula*, District Sajany, Siberia, July, coll. and det. by *Murashkinsky*.

\**Polyporus adustus* Fr.

On *Populus tremula*, District Sajany, Siberia, July, coll. *Murashkinsky*, B 23; on *Populus tremula*, District Tara, Siberia, October, coll. *Ziling*; on *Betula pubescens*, District Omsk, Siberia, August, coll. *Murashkinsky*, B 31; on *Carpinus cordata*, District Vladivostok, Eastern Asia, August, coll. *Ziling*, comm. by K. E. Murashkinsky, B 0151.

\**Polyporus amorphus* Fr.

On *Pinus silvestris*, District Tara, Siberia, June, coll. *Murashkinsky*, B 2.

*Polyporus benzoinus* (Wahl.) Fr.

On *Picea excelsa*, District Tara, Siberia, September, coll. *Subatsh*, comm. by K. E. Murashkinsky, B 18.

\**Polyporus brumalis* (Pers.) Fr.

On *Betula japonica*, District Amur, Eastern Asia, October, coll. *Krawtzew*; on *Betula dahurica*, Blagowietschensk, Eastern Asia,



October, coll. *Krawtzew*, both comm. by K. E. Murashkinisky, B 0102 and B 0104 respectively.

***Polyporus delectans* Pk.**

On *Quercus mongolica*, District Amur, Eastern Asia, October, coll. *Krawtzew*, comm. by K. E. Murashkinisky, B 0126.

***Polyporus dichrous* Fr.**

On *Betula pubescens*, District Sajany, Siberia, September, coll. *Konjev*, comm. by K. E. Murashkinisky, B 15; on *Populus tremula*, District Tara, Siberia, June, coll. *Murashkinisky*, B 50.

***Polyporus dryadeus* (Pers.) Fr.**

On *Populus tremula*, District Amur, Eastern Asia, October, coll. *Krawtzew*, comm. by K. E. Murashkinisky, B 0100.

***Polyporus fibrillosus* Karst.**

***Polyporus aurantiacus* Pk.**

On *Picea excelsa* and on *Pinus silvestris*, District Sajany, Siberia, June, coll. *Murashkinisky*, B 6 and an unnumbered specimen.

***Polyporus frondosus* Fr.**

On buried wood, District Amur, Eastern Asia, August, coll. *Krawtzew*, comm. by K. E. Murashkinisky, B 0201.

***Polyporus gilvus* Schw.**

On *Quercus mongolica*, District Vladivostok, Eastern Asia, July, coll. *Ziling*, comm. by K. E. Murashkinisky, B 0132.

***Polyporus hispidus* (Bull.) Fr., resupinate.**

On *Quercus mongolica*, District Amur, Eastern Asia, October, coll. *Krawtzew*, comm. by K. E. Murashkinisky, B 0124.

The fragment of a fructification received consists of resupinate tubes 15 mm. long, 3 to a mm., attached by a thin layer of substance to oblique surfaces of decorticated wood. No setae are present in the hymenium, spores are copious, colored, even, somewhat flattened on one side,  $5-7 \times 4-5 \mu$ . The specimen is so similar to *P. hispidus* in tubes, color of substance, and in spores that it seems to be from a resupinate portion of *P. hispidus* on an oblique surface. Nevertheless it may be a true *Poria* of a species not known to me.



**\*Polyporus lacteus Fr.**

On *Populus tremula*, District Omsk, Siberia, October, coll. *Ziling*; on *Betula verrucosa*, District Tomsk, Siberia, August, coll. *Ziling*; on *Salix* sp., District Amur, Eastern Asia,—all comm. by K. E. Murashkin, B 14, an unnumbered specimen, and B 098.

**Polyporus lentus Berk.**

On *Betula pubescens*, District Omsk, Siberia, September, coll. *Ziling*, comm. by K. E. Murashkin, B 29.

**Polyporus melanopus (Swartz) Fr.**

On *Abies sibirica*, District Tara, Siberia, October, coll. *Baranov*; on *Abies sibirica*, District Sajany, coll. *Murashkin*, B 60.

**Polyporus osseus Kalchb.**

On *Betula verrucosa*, District Omsk, Siberia, August, coll. *Ziling*, comm. by K. E. Murashkin, B 19.

**Polyporus pubescens (Schum.) Fr.**

On *Quercus mongolica*, District Amur, Eastern Asia, August, coll. *Krawtzev*, comm. by K. E. Murashkin, B 0128.

**Polyporus resinosus (Schrad.) Fr.**

On *Abies sibirica*, Altai, Mongolia, July, coll. *Baranov*, comm. by K. E. Murashkin.

Usually found on wood of frondose species in collections by the writer.

**Polyporus rutilans (Pers.) Fr.**

On *Populus tremula*, District Tara, Siberia, July, coll. *Murashkin*, B 62.

**Polyporus spumeus (Sow.) Fr.**

On *Quercus mongolica*, District Amur, Eastern Asia, October, coll. *Krawtzev*, comm. by K. E. Murashkin, B 0130.

**Polyporus squamosus (Huds.) Fr.**

On *Populus tremula*, Altai, Mongolia, coll. *Shingosijev*, comm. by K. E. Murashkin.

**Polyporus trichrous Berk. & Curtis?**

On *Betula verrucosa*, Altai, Mongolia, August, coll. *Smirnov*, comm. by K. E. Murashkin, B 40.

Fructification is very thin, with soft, white substance sugges-



tive of *P. trichrous* and *P. leucospongia*; spores hyaline, even,  $3-4 \times 2-3 \mu$ ; no cystidia nor setae.

**Fomes fulvus** Fr.

On *Quercus mongolica*, District Amur, Eastern Asia, October, coll. Krawtzew, comm. by K. E. Murashkinisky, B 0127.

**\*Fomes igniarius** (L.) Fr.

On *Betula pubescens*, District Omsk, Siberia, June, coll. Murashkinisky, B 5; on *Betula verrucosa*, District Tara, Siberia, coll. Murashkinisky; on *Alnus fruticosa*, District Sajany, Siberia, coll. Murashkinisky.

**\*Fomes pinicola** Fr.

On *Picea excelsa*, District Tara, Siberia, July, coll. Murashkinisky; on *Pinus sibirica*, Tobolsk, Siberia, September, coll. Dravert, comm. by K. E. Murashkinisky; on *Abies sibirica*, Altai, Mongolia, July, coll. Baranov, comm. by K. E. Murashkinisky.

**Fomes Palliseri** Berk.

On *Picea excelsa*, District Tara, Siberia, August, coll. Murashkinisky, B 3.

**Fomes roseus** (Alb. & Schw.) Fr.

On *Abies sibirica*, District Sajany, Siberia, July, coll. Murashkinisky.

**Trametes Abietis** Karst.

On *Pinus silvestris*, District Tara, Siberia, coll. Murashkinisky, B 35.

**Trametes hispida** (Bagl.) Fr.

On *Populus nigra*, District Sajany, Siberia, June, coll. Murashkinisky, B 17.

**Trametes inodora** Fr. Icones Hym. pl. 191, f. 1.

On bark of decaying *Quercus mongolica*, District Amur, Eastern Asia, August 15 and 29, coll. Krawtzew, comm. by K. E. Murashkinisky, B 0121 and B 0125.

These specimens are referred to *Trametes inodora* rather than to *T. suaveolens*, because the tube mouths have not darkened and are rather regularly about 2 to a mm.



**Trametes protracta** Fr. Icones Hym. *pl.* 191, *f.* 3.

*Trametes trabea* Pers. sec. Bresadola, I. R. Accad. Agiati Atti III. 3: 90. 1897.

On *Pinus silvestris*, District Barnaoul, Siberia, July, coll. *Konjev*, comm. by K. E. Murashkin, B 020; on *Populus tremula* and on *Quercus mongolica*, October and September, District Amur, Eastern Asia, coll. *Krawtzev*, comm. by K. E. Murashkin, B 090 and B 0105 respectively.

In one specimen there were found a few spores, colored, even,  $10-11 \times 7 \mu$ , but so few that they may be foreign; all the specimens have cystidia with colored, capitate, aculeate tips.

**Trametes radiata** Burt, n. sp.

Type: in Burt Herb.

Fructification light drab of Ridgway, dimidiate, sessile, triquetrous, glabrous, strongly radiately rugose, the margin thin, entire; flesh white, soft, corky, equalling the tubes in thickness, drying without noteworthy taste or odor; tubes white, up to 8 mm. long, about  $2-2\frac{1}{2}$  to a mm., angular, the mouths warm buff, entire; no spores present; no cystidia, setae, nor hyphal fascicles present in the hymenium.

Fructification 4 cm. long, 7 cm. wide,  $1\frac{1}{2}$  cm. thick.

On *Betula dahurica*, District Amur, Eastern Asia, Oct. 15, coll. *Krawtzev*, comm. by K. E. Murashkin, B 0122.

*Trametes radiata* belongs in the group with *T. suaveolens* but has a smaller, light drab fructification which is strongly radiately rugose, and smaller tubes the mouths of which are not smoky.

**Trametes suaveolens** (L.) Fr.

On *Salix* sp., District Tara, Siberia, June, coll. *Murashkin*, B 10.

\***Trametes stereoides** (Fr.) var. **Kmetii** Bres.

On *Salix* sp., District Omsk, Siberia, September, coll. *Ziling*, comm. by K. E. Murashkin.

\***Trametes gibbosa** (Pers.) Fr.

On *Populus tremula*, District Tara, coll. *Murashkin*, B 21.

**Daedalea confragosa** (Bolt.) Fr.

On *Populus tremula*, District Tara, Siberia, August, coll. *Mu-*



*rashkinsky*, B 8; on *Betula verrucosa*, District Sajany, Siberia, September, coll. *Konjev*, comm. by K. E. Murashkinsky, B 11.

*Daedalea aurea* (Batt.) Fr.

On *Betula pubescens*, District Tara, Siberia, September, coll. *Murashkinsky*.

\**Daedalea quercina* (L.) Fr.

On rotting trunks, District Vladivostok, Eastern Asia, June, coll. *Ziling*, comm. by K. E. Murashkinsky, B 0132.

Remarkable by having diameter of tubes and thickness of dissepiments only about half that of American and European specimens.

\**Daedalea unicolor* (Bull.) Fr.

On *Betula pubescens*, District Omsk, and on *Betula verrucosa*, District Sajany, Siberia, September and July, coll. *Murashkinsky*, B 22 and an unnumbered specimen.

*Poria caesio-alba* Karst.

On *Abies holophylla*, Primorje, District Vladivostok, Eastern Asia, June, coll. *Ziling*, comm. by K. E. Murashkinsky, B 032c.

*Poria laevigata* Fr.

On *Betula pubescens*, District Omsk, Siberia, September, coll. *Ziling*, comm. by K. E. Murashkinsky, B 27.

*Poria mucida* (Pers.) Fr.

On bark of *Picea excelsa*, Altai, Mongolia, July, coll. *Murashkinsky*, B 33.

*Poria taxicola* (Pers.) Bres.

On *Pinus silvestris*, District Tara, Siberia, June, coll. *Murashkinsky*.

This specimen has hyaline, even, allantoid spores 4-4½  $\mu$ , not abundant; no setae, cystidia, hyphal fascicles, nor gloeocystidia.

*Poria xantha* Fr.

On charcoal, District Tara, Siberia, coll. *Murashkinsky*.

*Porothelium Friesii* Mont.

On *Abies sibirica*, District Tara, Siberia, September, coll. *Murashkinsky*, B 08.



Separable; spores colorless, even,  $4 \times 2\frac{1}{2} \mu$ ; no setae, cystidia, nor hyphal fascicles.

**Merulius serpens** Fr.

On bark of *Juniperus communis*, District Tara, Siberia, June, coll. *Murashkinsky*.

\***Merulius tremellosus** Fr.

On *Betula pubescens*, District Omsk, Siberia, September, coll. *Murashkinsky*, B 7 and an unnumbered specimen.

HYDNACEAE

**Hydnum auriscalpium** L.

On *Pinus silvestris*, District Omsk, Siberia, September, coll. *Baranov*, comm. by K. E. *Murashkinsky*.

**Hydnum Erinaceus** Bull.

On *Quercus mongolica*, District Amur, Eastern Asia, November, coll. *Krawtzew*, comm. by K. E. *Murashkinsky*, B 082.

**Hydnum Hollii** (Schmidt) Fr.

On rotting frondose wood, District Omsk, Siberia, September, coll. *Ziling*, comm. and det. by K. E. *Murashkinsky*.

**Hydnum Murashkinskyi** Burt, n. sp.

Type: in Burt Herb.

Fructifications coriaceous-corky, drying rigid, dimidiate, sessile, slightly decurrent at the base, imbricate, laterally confluent, concentrically sulcate, fibrillose, drying cinnamon-buff of Ridgway, the margin thin, light-colored, entire, substance up to 4 mm. thick, colored like the pileus; teeth snuff-brown, 2-4 mm. long, cylindric, acute,  $240 \mu$  in diameter, about 3-4 to a mm.; no special conducting organs in substance, trama, or hymenium; no cystidia, occasional hyphal fascicles protruding from the hymenium; spores white, even,  $2\frac{1}{2} \times 1\frac{1}{2} \mu$ .

Fructifications  $1\frac{1}{2}$ -2 cm. long, 2-6 cm. broad by confluence, 6-8 mm. thick.

On bark of decaying *Betula verrucosa*, District Tara, Siberia, September 1, 1928, coll. *Murashkinsky*, B 04, type.

This species is related to *H. adustum* but the pileus is concentrically sulcate and glabrous, attached by the full width of the



dimidiate pileus rather than by a distinct stem or more or less stem-like base, and the hyphal fascicles of the hymenium are more conspicuous than those of *H. adustum*.

**Hydnum ochraceum** Pers.

On *Betula pubescens*, District Omsk, Siberia, July and September, coll. *Murashkinsky*, B 28 and an unnumbered specimen; on *Betula verrucosa*, District Tara, September, coll. *Murashkinsky*, B 010.

**Hydnum reflexum** Burt, n. sp.

Type: in Burt Herb.

Fructification 2½ cm. long, 4 cm. broad, effuso-reflexed, mostly resupinate, with the margin reflexed 5 mm., coriaceous, tomentose, drying cinnamon-buff of Ridgway, thin, entire; substance colored like reflexed surface, up to 1 mm. thick; teeth drying cinnamon, about 2 mm. long, cylindric, acute, about 3 to a mm.; no special conducting organs in the substance or the hymenium; no cystidia; small hyphal fascicles protrude from the hymenium up to 20 to 25  $\mu$  above its surface; a few floating spores are colorless, even,  $4 \times 2\frac{1}{2} \mu$  but may be foreign.

On bark of *Betula*, District Bijsk, Siberia, October 3, 1928, coll. *Dravert*, comm. by K. E. *Murashkinsky*, B 0129, type.

*Hydnum reflexum* may be distinguished from the effuso-reflexed species heretofore known by the tomentose, cinnamon-buff surface of the free margin, by the somewhat darker teeth, by the occurrence of hyphal fascicles like those of *Polyporus hirsutus* protruding here and there in the hymenium, and by the absence of cystidia.

**Hydnum velutinum** Fr.

On the ground, District Tara, Siberia, July, coll. *Murashkinsky*.

**\*Irpex fusco-violaceus** Fr.

On *Abies excelsa*, District Sajany, Siberia, September, coll. *Autonov*, comm. by K. E. *Murashkinsky*.

**\*Irpex lacteus** Fr.

On *Salix* sp., District Omsk, Siberia, September, coll. *Murashkinsky*; on *Betula verrucosa* and *Betula pubescens*, District Sajany, Siberia, July and August, coll. *Ziling*, comm. by K. E. *Murashkinsky*, B 16 and B 30 respectively.



*Irpex pachyodon* (Pers.) Bres.

On *Alnus hirsuta*, District Amur, Eastern Asia, October, coll. *Krawtzew*, comm. by K. E. Murashkinisky, B 0120.

*Phlebia radiata* Fr.

On *Betula verrucosa*, District Omsk, Siberia, August, coll. *Murashkinisky*, B 1.

*Phlebia strigoso-zonata* (Schw.) Lloyd. See Burt, Mo. Bot. Gard. Ann. 8: 393-395. 1921.

On *Populus tremula*, District Amur, Eastern Asia, October, coll. *Krawtzew*, comm. by K. E. Murashkinisky, B 081.

*Odontia bicolor* (Alb. & Schw.) Bres.

On *Betula* sp., District Lushsk, Province Petrograd, August, coll. *Boudartzev*, comm. by K. E. Murashkinisky.

*Kneiffia setigera* Fr.

On *Alnus fruticosus*, District Sajany, July, coll. *Murashkinisky*, det. Kurpowa.

#### THELEPHORACEAE

\**Craterellus cornucopioides* Fr.

On ground, District Irkutsk, Siberia, August, comm. by K. E. *Murashkinisky*.

*Thelephora palmata* (Scop.) Fr.

On ground, District Tara, Siberia, August 21, coll. *Murashkinisky*, B 06.

*Thelephora tenuis* Burt, n. sp.

Type: in Burt Herb.

Fructifications drying Verona brown of Ridgway, cespitose, dimidiate, sessile, imbricate, confluent, soft, flexible, fibrous, with the fibrils somewhat matted together to form a roughened but not squamulose upper surface, very thin, only 700  $\mu$  thick in section, the margin thin, concolorous; hymenium inferior, Verona brown, fibrous, even, not at all papillose; spores dark umbrinous under the microscope, subangularly globose or ellipsoidal, rough, 7-8  $\times$  6-7  $\mu$ .

Clusters 3-4 cm. in diameter; individual pileus 1-1 $\frac{1}{3}$  cm. long, 1 $\frac{1}{2}$ -2 cm. broad, 600-700  $\mu$  thick.



On sandy ground, District Amur, Eastern Asia, August 20, coll. *Krawtzew*, comm. by K. E. Murashkin, B 084, type.

*Thelephora tenuis* is related to *T. intybacea* but is thinner, with fibrils of the upper surface not matted into squamules, the margin concolorous, and the hymenium not papillose.

***Thelephora terrestris* Ehrh.**

On ground, District Tara, Siberia, June, coll. *Murashkin*; on ground and on roots of *Quercus mongolica*, District Amur, Eastern Asia, July 27, coll. *Krawtzew*, comm. by K. E. Murashkin, B 096.

***Hypochnus spongiosus* (Schw.) Burt**

On decaying wood of *Pinus silvestris*, District Tara, Siberia, September, coll. *Murashkin*, B 02.

***Hypochnus umbrinus* Fr. ?**

On fallen limb of *Picea obovata*, District Tara, Siberia, August, coll. *Murashkin*, B 011.

Young, sterile, mycelial stage of this species in my opinion.

***Stereum Chailletii* Pers.**

On *Pinus silvestris*, District Omsk, Siberia, September, coll. *Murashkin*.

***Stereum fasciatum* Schw.**

On *Pinus* sp., District Tara, Siberia, September, coll. *Baranov*; on *Betula verrucosa* and on *Pinus silvestris*, District Barnaoul, Siberia, May, coll. *Konjev*, comm. by K. E. Murashkin, B 026 and B 027; on *Quercus mongolica*, District Amur, Eastern Asia, October, coll. *Krawtzew*, comm. by K. E. Murashkin, B 085 and B 0200; on deciduous wood, Primorje, District Vladivostok, Eastern Asia, June, coll. *Ziling*, comm. by K. E. Murashkin, B 037.

*Stereum fasciatum* is widely distributed; very common in North America, it is present in Herb. E. Fries at Upsala from Norway as the type of *Stereum arcticum*. I have two collections of *S. fasciatum* from the Tirol comm. by Litschauer under the name *S. lobatum*—a species of more tropical range. *S. fasciatum* is perhaps common in the southern hemisphere also, for I have received five collections from Professor P. A. van der Bijl made by him on



*Eucalyptus* and other wood at Victoria Falls, Rhodesia, Transvaal, and Cape, South Africa.

*Stereum fuscum* (Schrad.) Quelet (= *S. bicolor* Fr.)

On *Betula pubescens*, District Omsk, Siberia, September, coll. *Murashkin*, also *Ziling*, comm. by K. E. Murashkin, B 15; resupinate on *Quercus mongolica*, District Amur, Eastern Asia, October, coll. *Krawtzev*, comm. by K. E. Murashkin, B 080.

*Stereum gausapatum* Fr.

On *Quercus pedunculata*, Sestrorjetzk, Siberia, August, coll. A. *Boudartzev*, comm. by K. E. Murashkin.

*Stereum hirsutum* (Willd.) Fr.

On *Alnus fruticosus*, District Sajany, Siberia, July, coll. *Murashkin*; on *Betula verrucosa*, District Tara, Siberia, September, coll. *Murashkin*, B 096.

*Stereum ochroleucum* Fr.

On decaying limb of *Quercus mongolica*, District Amur, Eastern Asia, August 25, 1928, coll. *Krawtzev*, comm. by K. E. Murashkin, B 086.

This gathering is a very important find, for European mycologists since the time of Fries have erroneously referred to *S. ochroleucum* specimens of very different structure from that of the authentic specimen in Kew Herbarium, the true structure of which was given in detail in my work on *Stereum* in *Mo. Bot. Gard. Ann.* 7: 235. 1920.

In the present gathering from Eastern Asia the fructifications are smaller than the authentic specimen, for some of those wholly resupinate are only 2 mm. in diameter, whereas the larger narrowly reflexed specimens are about 5 mm. in diameter. The color and internal structure agree with those of the authentic specimen. The hyphae are interwoven throughout,  $2\frac{1}{2}$   $\mu$  in diameter, nodose-septate, with no intermediate layer of longitudinally arranged hyphae. No hardened crust nor golden zone marks the upper limit of the intermediate layer. No gloeocystidia nor colored conducting organs are present. The spores are copious for a *Stereum*, hyaline, even,  $4\frac{1}{2}$ -6  $\times$   $3\frac{1}{2}$ -4  $\mu$ .

Since known stations for *S. ochroleucum* are Sweden and Amur, future collections may be expected from Russia and Siberia.



**Stereum Pini** Fr.

On *Pinus silvestris*, District Barnaoul, Siberia, July, coll. *Konjev*, comm. by K. E. Murashkin, B 018.

\***Stereum rhytidocyclum** Sacc. & F. Sacc. Soc. Roy. Bot. Belg. Bul. 28: 79. pl. 4. f. 1. 1889; Syll. Fung. 9: 226. 1891.

On wood which has microscopic structure of a frondose species but is erroneously stated on the label as *Abies sibirica*, District Tara, Siberia, August, coll. *Murashkin*, B 05. The type was collected on trunks of *Sorbus Aucuparia* in subalpine woods, Golubaja, Siberia.

The present Tara gathering is effuso-reflexed with the resupinate part about  $3-5 \times 1\frac{1}{2}-2$  cm. and one margin reflexed about 2-3 mm., concentrically sulcate on the upper surface, warm buff of Ridgway and rough but not hairy, the margin entire; hymenium even, cinnamon-drab of Ridgway; in section about 700  $\mu$  thick, composed of loosely arranged, colorless, even-walled, rather rigid, somewhat interwoven hyphae not nodose septate, 2-3  $\mu$  in diameter, which extend obliquely from substratum to hymenium and have their tips somewhat colored and agglutinate in the hymenium; no colored conducting organs, setae, cystidia, nor hyphal fascicles; the only spore found is colorless, even, about  $14 \times 8$   $\mu$  but may be foreign.

This species may be distinguished from *Stereum sanguinolentum* by absence of colored conducting organs and occurrence on frondose wood, and from *S. fasciatum* and *S. hirsutum* by more paper-like consistency and upper surface of reflexed margin not being tomentose nor hirsute.

**Stereum rugosiusculum** Berk. & Curtis. See Burt, Mo. Bot. Gard. Ann. 7: 127. text f. 14. 1920.

On *Populus tremula*, District Tara, Siberia, August, coll. *Murashkin*, B 07 and B 013.

**Stereum rugosum** Pers.

On *Alnus fruticosa*, District Sajany, Siberia, July, coll. *Murashkin*.

**Stereum sanguinolentum** Alb. & Schw.

On *Pinus silvestris*, District Tara, Siberia, August and September, coll. *Ziling*, 2 unnumbered specimens comm. by *Murashkin*.



sky; on *Picea excelsa* and *Abies sibirica*, District Tara, Siberia, September, coll. *Murashkinsky*, B 09a and B 014.

***Stereum spadiceum*** (Pers.) Bres.

On *Ailanthus glandulosa*, Russia, July, ex Herb. *Jaczewski*, comm. by K. E. *Murashkinsky*.

***Stereum sulcatum*** Burt

On *Larix sibirica*, Altai, Mongolia, July, coll. *Murashkinsky*, comm. as *S. Karstenii* Bres.; on living aged trunk of *Chamaecyparis formosensis*, altitude 6000–8000 ft., Formosa, Japan, comm. by D. Numata, Kyoto Imperial Univ.

***Stereum versiforme*** Berk. & Curtis

On *Quercus mongolica* and *Rhododendron* sp., District Amur, Eastern Asia, August to October, coll. *Krawtzew*, comm. by K. E. *Murashkinsky*, B 083, B 087, and B 0131 respectively.

***Hymenochaete badio-ferruginea*** (Mont.) Lév.

On *Larix dahurica*, District Amur, Eastern Asia, August, coll. *Krawtzew*, comm. by K. E. *Murashkinsky*, B 0101.

***Hymenochaete Mougeotii*** (Fr.) Cooke

On *Rhododendron dahurica*, District Sajany, Siberia, July, coll. *Murashkinsky*; on *Abies sibirica*, District Tara, October, coll. *Sheludjakova*, comm. by K. E. *Murashkinsky*.

\****Hymenochaete tabacina*** (Sow.) Lév.

On *Prunus Padus*, District Tara, Siberia, October, coll. *Baranov*, comm. by K. E. *Murashkinsky*.

***Corticium confluens*** Fr.

On *Quercus mongolica*, District Amur, Eastern Asia, October, coll. *Krawtzew*, comm. by K. E. *Murashkinsky*, B 092.

***Corticium frustulosum*** Bres.

On *Pinus silvestris*, District Tara, Siberia, August, coll. *Murashkinsky*, B 03.

***Corticium galactinum*** Fr.

On *Quercus mongolica*, District Amur, Eastern Asia, September, coll. *Krawtzew*, comm. by K. E. *Murashkinsky*, B 0103.

In Mo. Bot. Gard. Ann. 13: 202. 1926, I reported specimens of



this species from Japan, Prov. Awaji, collected by Yasuda at Hiroto-Mura and Mt. Mikuma.

*Corticium hydnans* (Schw.) Burt

*Corticium colliculosum* Berk. & Curtis; *C. Queletii* Bres.

On *Salix* sp., District Barnaoul, Siberia, June, coll. *Konjev*, comm. by K. E. Murashkin, B 025.

*Corticium illaqueatum* Bourd. & Galz.

On charred wood of *Populus tremula*, District Barnaoul, Siberia, May, coll. *Konjev*, comm. by K. E. Murashkin, B 029.

*Corticium investiens* (Schw.) Bres.

On *Pinus silvestris*, District Tara, Siberia, September, coll. *Murashkin*, B 012.

*Corticium lactescens* Berk.

On *Salix* sp., District Omsk, Siberia, September, coll. *Murashkin*.

*Corticium laeve* Pers.

On *Abies sibirica*, District Wjatka, April, coll. *Fokia*, comm. by K. E. Murashkin.

*Corticium ochraceum* Fr.

On *Sorbus Aucuparia*, District Sajany, Siberia, July, coll. *Ziling*, comm. by K. E. Murashkin.

*Corticium polygonium* Pers.

On fallen twig of *Populus* sp., District Sajany, Siberia, July, coll. *Murashkin*.

*Corticium radiosum* Fr.

On *Pinus silvestris*, District Tara, Siberia, August, coll. *Murashkin*.

*Corticium roseum* Pers.

On *Salix* sp., District Tara, Siberia, June, coll. *Murashkin*.

*Corticium sulphureum* Fr.

Young, sterile mycelial stage on *Philadelphus* sp., Promorje, District Vladivostok, Eastern Asia, July, coll. *Ziling*, comm. by K. E. Murashkin, B 035.

*Peniophora corticalis* (Bull.) Bres. (= *Peniophora quercina* (Pers.) Cooke).



On *Quercus mongolica*, District Amur, Eastern Asia, November, coll. *Krawtzew*, comm. by K. E. Murashkin, B 091.

*Peniophora gigantea* (Fr.) Masee

On *Pinus silvestris*, District Tara, Siberia, August, coll. *Murashkin*.

*Peniophora mutata* (Peck) Bres.

On *Populus tremula*, District Sajany, Siberia, July, coll. *Murashkin*; on *Populus tremula*, District Tara, Siberia, coll. *Poljakov*, comm. by K. E. Murashkin.

*Coniophora byssoidea* (Pers.) Fr.

On wood of *Pinus silvestris*, District Barnaul, Siberia, June, coll. *Konjev*, comm. by K. E. Murashkin, B 028.

*Coniophora olivacea* (Fr.) Karst.

On charred wood of *Pinus silvestris*, District Barnaul, Siberia, May, coll. *Konjev*, comm. by K. E. Murashkin, B 030.

*Coniophora sibirica* Burt, n. sp.

Type: in Burt Herb.

Fructification effused, membranaceous, separable when moistened, fibrous, drying raw umber of Ridgway, the margin thinning out, concolorous; hymenium even, pulverulent, not setulose; structure in section 200–250  $\mu$  thick, composed of loosely interwoven, rigid, even-walled, non-incrusted, dark-colored hyphae 4–5  $\mu$  in diameter, which give their color to the fructification and are not nodose-septate; no cystidia; spores colored, even,  $11 \times 6 \mu$ .

On decaying coniferous wood, probably *Pinus silvestris*, District Tara, Siberia, August, 1921, coll. *Murashkin*, comm. as *C. atrocinnerea*.

*Coniophora sibirica* is related to *C. arida* but is distinct by coarser, thicker-walled, and more rigid hyphae and fructifications which may be peeled away from the substratum when moistened.

*Aleurodiscus disciformis* (DC.) Pat.

On bark of *Acer* sp., Primorje, District Vladivostok, Eastern Asia, June, coll. *Ziling*, comm. by K. E. Murashkin, B 033.

\**Aleurodiscus diffissus* (Sacc.) Burt, n. comb.

*Peniophora diffissa* Sacc. Soc. Roy. Bot. Belg. Bul. 28: 79. pl. 4. f. 2. 1889; Syll. Fung. 9: 239. 1891.



Fructifications gregarious, crowded, somewhat disk-shaped, tuberculiform, wood-brown of Ridgway, cracking to the substratum and splitting into small fructifications, coriaceous, centrally attached, the margin free, darker underneath; hymenium wood-brown, coarsely wrinkled, not shining; in section 500  $\mu$  thick, army-brown, composed of suberect, interwoven, colored hyphae about 2  $\mu$  in diameter, with a darker zone along the substratum; bottle-brush paraphyses (dendrophyses) with deeply staining body about 4  $\mu$  in diameter, and numerous slender lateral branches about 4  $\mu$  long are intermixed with other infrequent paraphyses having somewhat moniliform tips; spores hyaline, even, globose,  $5\frac{1}{2}$ –6  $\mu$  in diameter.

On bark of decaying *Rhododendron dahuricum*, District Sajany, Siberia, July 11, 1927, coll. *Murashkinsky*.

*Aleurodiscus diffissus* resembles somewhat in aspect *Stereum rufum* and *Corticium polygonium*. The small fructifications 1–2 mm. in diameter and 500  $\mu$  thick are densely gregarious over areas up to 5 cm. long by 2 cm. wide and show well the character of forming new fructifications by splitting, as shown by Saccardo in his fig. 2b and upon which he based the specific name. The hymenial bottle-brush and moniliform paraphyses are like those of *A. cerrusatus*.

*Cytidia salicina* (Fr.) Burt

On *Salix* sp., District Tara, Siberia, September, coll. *Ziling*, comm. by K. E. Murashkinsky.

*Microstroma Juglandis* Sacc.

On living leaves of *Juglans regia*, Russia, July, comm. by K. E. Murashkinsky.

This species is included by some authors in the Basidiomycetes.

#### CLAVARIACEAE

*Clavaria formosa* (Pers.) Fr.

On the ground, District Amur, Eastern Asia, August, coll. *Krawtzev*, comm. by K. E. Murashkinsky, B 088.

#### DACRYOMYCETACEAE

*Ditiola conformis* Karst.

On rotting coniferous wood, District Tara, Siberia, October, coll. *Baranov*, comm. by K. E. Murashkinsky.



**Femsjonia luteo-alba** Fr.

On *Pinus silvestris*, District Barnaoul, Siberia, August, coll. *Konjev*, comm. by K. E. Murashkin, B 019.

## TREMELLACEAE

**\*Exidia glandulosa** (Bull.) Fr.

On *Betula verrucosa*, District Omsk, Siberia, August, coll. *Murashkin*.

**Eichleriella spinulosa** (Berk. & Curtis) Burt

On *Populus nigra*, District Sajany, Siberia, coll. *Katajewskaja*, comm. by K. E. Murashkin.

**Sebacina calcea** (Pers.) Bres.

On *Larix sibirica*, District Sajany, Siberia, July, coll. *Murashkin*.

## AURICULARIACEAE

**Auricularia auricula-Judae** (L.) Schroet.

On *Ulmus* sp., Prov. Primorsk, Eastern Asia, July, coll. *Avotia*, comm. by K. E. Murashkin, B 45.

**Auricularia auriformis** (Schw.) Earle

On *Quercus mongolica*, District Amur, Eastern Asia, October, coll. *Krawtzev*, comm. by K. E. Murashkin, B 095.

The specimen, somewhat shattered in transit, is dark mouse-gray and somewhat olivaceous where hairs are best developed, 2½ cm. broad, very thin, 1260 μ in section, with hairs of the upper surface 40–60 μ long, not at all bulbous at base; spores 9–16 × 4–5 μ. The specimen agrees well with gatherings from South Carolina in my herbarium which I compared with an authentic specimen from Herb. Schweinitz.

**Septobasidium Carestianum** Bres.

On *Ribes* sp., District Sajany, Siberia, July, coll. *Murashkin*.